

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Case P-11267	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE2005/000121	International filing date (day/month/year) 01-02-2005	Priority date (day/month/year) 02-02-2004
International Patent Classification (IPC) or national classification and IPC See Supplemental Box		
Applicant Aktiebolaget Electrolux et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 13 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input checked="" type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input checked="" type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input checked="" type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 01-09-2005	Date of completion of this report 20-04-2006
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Marianne Dickman / JA A Telephone No. +46 8 782 25 00

Form PCT/IPEA/409 (cover sheet) (April 2005)

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: **Cover sheet**

International patent classification (IPC)

F23D 14/06 (2006.01)

F24C 3/08 (2006.01)

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Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____,
which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the drawings:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. II Priority

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

The priority of claims 1, 22, 26, 42-72 has been investigated. The inventions defined in claims 45, 47-48, 50, 53-72 have not been found in the earlier application (radially outwardly extending portion of the distributor, cap including flame ports or venturi extensions, occluding structures in the distributor, distributor built up of separate segments). Therefore, the international filing date indicated above is considered to be the relevant date for the subject matter of those claims.

Thus, priority is not considered valid for claims 45, 47-48, 50, 53-72. Therefore, documents WO 2004044490 A1 (P) and US 20040195399 (P) can be of relevance.

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Box No. IV Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has, within the applicable time limit:
- ☐ restricted the claims
 - ☐ paid additional fees
 - ☐ paid additional fees under protest and, where applicable, the protest fee
 - ☐ paid additional fees under protest but the applicable protest fee was not paid
 - ☒ neither restricted the claims nor paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with
 - ☒ not complied with for the following reasons:

The present application has been considered to contain 5 inventions which are not linked such that they form a single general inventive concept, as required by Rule 13 PCT for the following reasons:

Invention 1 - Claims 1-36 and 69-72: Relates to a gas burner including at least one distribution chamber intended to distribute an air gas mixture to a plurality of flame ports. At least one injector is positioned to inject gas into said distribution chamber/s via a venturi formed by a vertically directed passage, a transition port, and at least one venturi extension extending away from said transition port.

Invention 2 - Claims 37-41: Relates to a manifold for a gas burner and defines a cavity made up of upper and lower relatively thin walls and a peripheral wall. At least one injector is mounted to the manifold to deliver air gas to a distribution means, and an inlet port allows supply of gas to pressurise said cavity.

Invention 3 - Claims 42-53 and 69-72: Relates to a gas burner

.../...

4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts
 - ☒ the parts relating to claims Nos. 1-36, 69-72

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX IV

having at least two discrete distribution chambers. Each chamber includes flame ports and a venturi for supplying an air gas mixture thereto. The venturis cooperate with a respective injector conducting gas from a single gas supply connection via a common manifold. Each distribution chamber includes radially, towards the centre of the burner, extending portions.

Invention 4 - Claims 54-59: Relates to a gas burner including a distributor having flame ports and at least two venturis. Each venturi cooperates with a respective injector located near to a wall portion provided with elongated, at their extremities narrowing, air inlet ports.

Invention 5 - Claims 60-68: Relates to a gas burner including distributor means with at least one chamber to distribute an air gas mixture to flame ports. At least one injector is positioned to inject gas into said chamber/s via a respective vertically directed converging passage with a transition port. A venturi is formed by the converging passage, the transition port, and a venturi extension acting upon a generally horizontal flow of air gas mixture. Near the rim of the transition port two or more occluding structures are arranged to direct said air gas mixture to the flame ports.

Invention 1 relates to the problem of designing a venturi injecting gas into a distribution chamber, cooperating with flame ports, in a gas burner.

Invention 2 relates to the problem of the simple manufacture of a manifold for a gas burner.

Invention 3 relates to the problem of designing distribution chambers with cooperating flame ports in a gas burner intended for larger cooking utensils.

Invention 4 relates to the problem of designing air inlet ports cooperating with respective injectors for a gas burner including at least two venturis distributing an air gas mixture to flame ports.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX IV

Invention 5 relates to the problem of designing the distribution chamber of a gas burner to improve the conducting of an air gas mixture from a transition port to flame ports.

As both problems and solutions are technically different, no single general concept can be formulated based on the technical features of the inventions. Consequently, the requirements of Rule 13.1 PCT are not met.

It was investigated under Rule 13.2 if any further features, either in the claims or derivable from the description, could be considered as a same or corresponding feature and which could be considered a special technical feature establishing a technical link between the five groups of inventions.

No such features were identified.

Consequently, the claims form five groups of inventions which do not have common special technical features as required by PCT Rule 13.2.

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>See supplemental box</u>	YES
	Claims	<u>See supplemental box</u>	NO
Inventive step (IS)	Claims	<u>See supplemental box</u>	YES
	Claims	<u>See supplemental box</u>	NO
Industrial applicability (IA)	Claims	<u>See supplemental box</u>	YES
	Claims	<u>See supplemental box</u>	NO

2. Citations and explanations (Rule 70.7)

This opinion is established from the parts relating to claims 1-36 and 69-72 as originally filed, which correspond with the "invention 1" as stated in the "Invitation to restrict or pay additional fees".

Reference is made to the following documents:

D1: EP0534301 A2
D2: FR2770620 A1
D3: US2320754 A
D4: FR2650369 A1
D5: US6332460 B1
D6: US5842849 A

Invention 1 relates to a gas burner including at least one distribution chamber intended to distribute air gas mixture to a plurality of flame ports. At least one injector is positioned to inject gas into said distribution chamber/s via a venturi formed by a vertically directed passage, a transition port, and at least one venturi extension extending away from said transition port.

D1 reveals a burner body with a circular ring-shaped flame separator element (7) and a body (3) cooperating to define a toroidal shaped chamber (8). The chamber is separated by baffles (16) to form separate segments. The gas mixture reaches the chamber (8) via a vertical directed passage (4) and, for example four, generally horizontal venturi extensions (13) extending in separate directions radially away from the port of the passage (4); see especially column 5 lines 33-57.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V., 1

Novelty (N)	Claims:	<u>4, 7, 11-12, 14, 25, 27-29, 33-34, 69-72</u>	YES
			YES
	Claims:	<u>1-3, 5-6, 8-10, 13, 15-24, 26, 30-32, 35-36</u>	NO
			NO
Inventive step (IS)	Claims:	<u>11, 14, 25, 27-28, 33-34, 69-72</u>	YES
			YES
	Claims:	<u>1-10, 12-13, 15-24, 26, 29-32, 35-36</u>	NO
			NO
Industrial applicability (IA)	Claims:	<u>1-36, 69-72</u>	YES
			YES
	Claims:		NO
			NO

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

D1 is considered to reveal such a gas burner as is stated in claims 1-3, 5-6, 13, 15, 17, 19, 31-32 and 35-36. Thus, the burner stated in these claims lack novelty and inventive step.

D2 reveals a burner similar to the one in D1; see page 5 line 29 - page 6 line 7. However, D2 shows a burner with the flame ports formed in the walls of the housing (7) and not in the cap (9). Further, D2 is considered to reveal such a burner as is stated in claims 16, 18, 20-21 and 30. Therefore, the subject of these claims also lacks novelty and inventive step.

D3 shows a burner with inwardly projecting burner members (27), the figures show four such members (27) (page 2, column 1 lines 20-22, fig. 1-9). However, it must be obvious for a skilled person to modify the known burner to include for example three "arms" instead. Also, it is considered obvious to include a trivet aligned with such "arms" instead of using "top ridges" (57). Further, D3 shows an aperture having a "clover leaf" configuration. The port of the supply passageway can be modified to get a venturi effect by knowledge of e.g. the device in D1. Such a modification is considered obvious to a person skilled in the art. Therefore, the burner stated in claims 4, 7 and 29 is novel but lacks inventive step.

D4 shows a segmented burner wherein each segment (5; 6) has its own distribution chamber, venturi (14; 15) and injector (11; 12), see page 4 lines 14-26 and figures. Therefore, the subject matter of claims 8-9 lacks novelty and inventive step.

D5 shows a burner including a distribution chamber (38) with two injectors (8). The construction with two injectors seems to build such "segments" as is stated in claim 10 (see column 2 lines 61-67). Further, a plurality of air entry ports (6) is formed and at least one of them is located adjacent to an injector (8), see figure 1. Therefore, the subject matter of claims 10, 22-24 and 26 is considered to lack novelty and inventive step in view of D5.

D6 reveals a gas burner including four separate chambers (30) forming a "segmented" distribution chamber. Each of the chambers (30) has its own gas supplying tube (17) connected therewith. Further, each of the gas supplying tubes (17)

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

cooperates with its own injector (15) and these injectors communicate with a common cavity (110) having a gas inlet for a pipe (14). To modify the port of the supply tubes (63) to get a venturi effect is obvious to a person skilled in the art, especially with knowledge of e.g. D1. So, the subject matter of claim 12 is novel but lacks inventive step in view of D6.

The invention defined in claims 11, 14, 25, 27-28, 33-34 and 69-72 is not disclosed by any of the documents cited in the International Search Report. The cited prior art does not give any indication that would lead a person skilled in the art to such a gas burner. Therefore, the invention claimed in these claims is not obvious to a person skilled in the art. Accordingly, the invention defined in claims 11, 14, 25, 27-28, 33-34 and 69-72 is novel and is considered to involve an inventive step.

The invention is industrially applicable.

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT)..

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT.

Claims 7, 8 and 10 have an unclear relationship to earlier claims. Thus, it is considered these claims should relate to "any one of claims...".

Claim 10 must relate to claim 8 while the burner has to include more than one "segment" with its own distribution chamber and injector. Thus, the burner must have more than one injector.

Claim 22 states "one air entry port per injector" and claim 27 states "each said injector". These claims (and related claims 23-26, 28) seem to relate to a burner including more than one injector and if so, this should be clarified in claims 22 and 27.

Claim 32 does not clearly define if there can be just one injector communicating with the cavity.